

**Advisory Action
Before the Filing of an Appeal Brief**

Application No.

10/524,229

Applicant(s)

KITADA ET AL.

Examiner

ZULMARIAM MENDEZ

Art Unit

1795

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 06 May 2008 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☐ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: 6.
Claim(s) rejected: 5 and 7-11.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:
See Continuation Sheet.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s) _____.
13. ☒ Other: See Continuation Sheet.

/Alexa D. Neckel/
Supervisory Patent Examiner, Art Unit 1795

Continuation of 11. does not place the application in condition for allowance because:

Applicant's arguments filed on May 6, 2008 have been fully considered but they are not persuasive. The applicant argues the following:

□ Switzer teaches that the semiconductor electrode used in the invention is typically employed at the cathode and that a platinum electrode is employed at the anode and he also teaches disadvantages of using electrodes made of the same material (platinum, see page 6, first paragraph of the remarks). The examiner does not find this argument persuasive since Switzer discloses that BOTH electrodes may contain a semiconductor material (col. 3, lines 9-13), and the disadvantages presented by Switzer are when both of the electrodes are made of platinum.

□ Neither Chambers nor Switzer recognized the problem of electrode material consumption after a prolonged use of the electrodes. Applicant argues that Chambers teaches that the only way to increase the amount of hydrogen gas and oxygen gas generated is to increase the number of electrodes in the apparatus whereas Switzer's apparatus comprises a rectifier, which does not allow the change in direction of the current flow (see page 6, last paragraph of the remarks). In response, the examiner does not find persuasive the fact that Chambers discloses having a plurality of electrodes in order to produce more hydrogen and oxygen, prevents the device from exchanging the polarity of the electrodes as it is well known in the art.

□ Applicant also argues that Chambers discloses a device that generates hydrogen and oxygen but none of the gases is stored, but fed directly into an engine (see page 7, second paragraph of the remarks). In response, the claimed invention only requires hydrogen to be generated, not providing storage for the gases produced during electrolytic process.

□ The applicant argues that unexpected results has been provided to show that the apparatus of the instant invention produces much greater quantity of hydrogen gas than oxygen gas (see tables of figures 3a and 3c) and that Chambers teaches an optimal amount of hydrogen and oxygen, suggesting a ratio of H₂/O₂ of 2:1. Likewise, Switzer discloses that hydrogen gas is collected at the cathode while oxygen gas is collected at the anode at a 2:1 ratio (col. 7, lines 62-65). In response, the showing of unexpected results requires the application of "high voltage" (see pages 13-14 of the specification). Therefore, it is not commensurate in scope with the scope of claim 5. It is noted that the "4.5 V", is the "average" voltage applied by the oscillator (see page 12), not the peak voltage (see figure 2). Clearly, one of ordinary skill in the art would have understood that the "high voltage" would have been on the order of 1500 V, not 4.5 V, in order to produce the claimed hydrogen production without oxygen production.

Continuation of 13. The rejection made to claim 6 under 35 U.S.C. 112 has been withdrawn in view of applicant's amendment. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is an examiner's statement of reasons for indicating allowable subject matter: the claimed invention requires a pulse electric power generated between the first electrode and second electrode having a voltage of higher than or equal to 1,500 volts. Accordingly, the polarity reversal is done to "move" the silicon from one electrode to the other, thereby preventing the need to replace one of the electrodes. Thus, the formation of oxygen is at a minimum due the silicon deposition occurring as the other half-cell reaction to the hydrogen generation half-cell reaction. The closest prior art, Chambers (US Patent no. 6,126,794) and Switzer et al (US Patent no. 4,663,004), discloses applying a pulsed electric signal from a power supply (col. 4, lines 29-33 of Chambers) but fails to teach wherein the voltage applied between the electrodes is higher than or equal to 1,500 volts. There was not found a teaching in the prior art suggesting modification of the conventional electrolytic process to obtain the features of the claimed invention.